REMARKS

Claims 3-7, 9, 11-13 and 16-20 presently appear in this case. No claims have been allowed. The official action of July 27, 2001, has now been carefully studied. Reconsideration and allowance are hereby respectfully urged.

Briefly, the present invention relates to a method of ameliorating the degenerative effects of injury or disease, other than an autoimmune disease or a neoplasm, on the central nervous system or peripheral nervous system by preventing or inhibiting axonal degeneration and/or promoting nerve regeneration. It has been discovered that NS-specific anti-self-activated T cells accumulate at a site of injury or disease of the CNS or PNS and have a neuroprotective effect. Thus, the method comprises the administration of such T cells, or antigens or peptides which activate T cells *in vivo* to produce such a population of T cells, or a nucleotide sequence which encodes such a NS-specific antigen or peptide for the purpose of activating such T cells.

The interview conducted on December 18, 2001, between Primary Examiner Christine Saoud and the undersigned attorney is hereby gratefully acknowledged. Unfortunately, Examiner Turner was unable to attend this interview. Examiner Turner is invited to contact the undersigned by telephone upon consideration of the present amendment in order to discuss any

remaining issues with respect to this case. In the interview, proposed amendments to claim 5 to overcome the 35 U.S.C. §112, second paragraph, rejection were discussed, as was applicants' proposal to amend claim 16 to exclude autoimmune diseases in order to overcome rejections based on the treatment of MS. Primary Examiner Saoud agreed that the limitation of an exclusion of autoimmune diseases and neoplasms should avoid art directed to the treatment of MS.

In the official action of July 27, 2001, as to applicants' traversal of the restriction requirement, the examiner stateed that a method for preventing or inhibiting axonal degeneration is separable from a method of promoting nerve regeneration. The examiner states that the two do not share the characteristics of a common utility or function and that they define distinct methods with different use, different modes of operation, different function and different effects. This restriction requirement is, again, respectfully traversed.

Claim 16 is not drawn either to a method of preventing or inhibiting axonal degeneration or to a method for promoting nerve regeneration. It is drawn to a method of ameliorating the degenerative effects of injury or disease. The operative steps in the claim are administering to a person having such an injury or disease an effective amount for

neuroprotection of a particular composition. The statement about how the composition achieves its result, i.e., preventing or inhibiting axonal degeneration and/or promoting nerve regeneration, is merely a statement of the intended mechanism. Whatever happens, happens and whether it is stated in the preamble of the claim or not, anyone administering the composition of the present invention to a person having such a defined injury or disease will inherently achieve prevention or inhibition of axonal degeneration and/or promotion of nerve regeneration. Regardless of whether or one or both of these effects are achieved, one will still be ameliorating the degenerative effects of injury or disease.

If a claim were issued in one patent that is identical to claim 16 but without the words "and/or promoting nerve regeneration" and a second claim were issued in a second patent that is identical to claim 16 but without the words "by preventing or inhibiting axonal degeneration and/or", the methods would be exactly the same. One would still be giving the same composition to the same person in the same amount for the same ultimate effect, i.e., ameliorating the degenerative effects of the injury or disease. A restriction requirement which could end in such a result is strictly forbidden by MPEP §803.01. Accordingly, it is again urged that it is inappropriate to consider that these statements of intended

mechanism, both of which achieve the desired claimed effect of ameliorating the degenerative effects of the injury or disease, do not cause the claim to encompass two separate and patentably distinct inventions. The examiner is again requested to reconsider and withdraw this restriction requirement. Applicants again note that 37 C.F.R. §1.144 permits the filing of a petition from this restriction requirement not later than the filing of an appeal in this case.

As to the species election, it is urged that, for the reasons discussed herein, the elected species is now allowable and, accordingly, the examiner must now examine and allow claims generic to such species and encompassing other, previously non-elected species.

Claims 3-7, 9-13 and 16-19 have been objected to under 37 C.F.R. §1.175(c) as being drawn to non-elected subject matter and thus to multiple patentably distinct inventions. This objection is respectfully traversed.

For the reasons given hereinabove, the claims are not directed to multiple patentably distinct inventions. Accordingly, reconsideration and withdrawal of this objection for the reasons discussed hereinabove are respectfully urged.

Claim 5 has been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The examiner states

that the claim fails to specifically delineate a disease, but instead recites exclusions of a disease. The examiner says that the term "said disease" appears to lack direct antecedent basis.

Claim 5 has now been amended so as to use the same language as appearing in claim 16, but to simply exclude injuries. Thus, claim 5 is now definite for the same reason that claim 16 was considered to be definite. The disease can be any disease, other than an autoimmune disease or a neoplasm, which exhibits degenerative effects on the central nervous system or the peripheral nervous system. Please note that claims 3 and 4 have also now been amended so as to employ parallel construction with the language of claim 5. All of these claims are now more clear. Reconsideration and withdrawal of this rejection are, therefore, respectfully urged.

It is noted that the examiner has acknowledged applicants' claim for foreign priority and receipt of the certified copy of the priority application.

Claims 3-7, 9, 10, 13, 16, 17 and 19 have been rejected under 35 U.S.C. §102(b) as being anticipated by Ling, as evidenced by Yucel, Enoch and Poser. The examiner states that Ling teaches administration of MBP to animals suffering from EAE, a model which mimics multiple sclerosis. The

examiner states that claims 3 and 4 are directed to effects of an injury or disease which may be glaucoma or trauma. The examiner states that glaucoma and optic neuropathy are associated with trauma and multiple sclerosis, citing Enoch. The examiner states that trauma plays a role in the pathogenesis of multiple sclerosis, citing Poser, and thus the reference teachings anticipate the claimed invention. This rejection is respectfully traversed.

Claim 16 has now been amended so as to specifically exclude the treatment of autoimmune diseases. Multiple sclerosis (MS) and EAE are autoimmune diseases (see Ling, column 1, lines 20-21, for example). Ling is directed to the treatment of MS and states at column 2, lines 30-32:

> The present invention exploits the use of peptide analogues which antagonize a T cell response to human myelin basic protein to effectively treat MS, while providing other related advantages.

Thus, the only disease taught as being treatable by the MBP analogs of Ling is MS. MS is excluded from all of the present claims. Therefore, the present claims cannot be anticipated by Ling, which only discloses use for the treatment of MS. MPEP §2131.01 states that additional references may be used in making a rejection under 35 U.S.C. §102 only when the extra references are cited to prove the primary reference contains an enabled disclosure, to explain the meaning of a term used

in the primary reference, or to show that a characteristic not disclosed in the reference is inherent. None of these are applicable to Ling. Ling has nothing whatsoever to do with trauma or glaucoma, and it is not believed that the examiner is arguing that any time MS is treated, one is inherently treating glaucoma or trauma. Accordingly, reconsideration and withdrawal of this anticipation rejection is respectfully urged.

Claims 3-7, 9, 10, 13, 16, 17 and 19 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Ling, Weiner, Enoch and Poser. The examiner states that Ling and Weiner teach the administration of MBP antigens for the treatment of multiple sclerosis and that Enoch and Poser teach the prevalence of neurodegenerative effects and myelin degeneration in multiple sclerosis, glaucoma and among patients with trauma. Thus, the examiner considers it to have been *prima facie* obvious that the neuroprotective benefits provided to MS patients which exhibit neurodegeneration, myelin degeneration, glaucoma and symptoms resultant from trauma would benefit from the coincident treatment of MS as the diseases and injuries are consecutive. This rejection is respectfully traversed.

Ling and Weiner, as the examiner states, only teach administration of MBP antigens for the treatment of MS. Ling

has been discussed above. Weiner specifically states that his method is directed to "treating a T cell-mediated autoimmune disease". See the abstract. As all of the present claims exclude autoimmune diseases, Weiner does not anticipate the present invention any more than Ling does. Weiner discloses that the oral administration of the antigen induces tolerance to the antigen (see, for example, col. 7, lines 4-13) and, thus, suppresses the autoimmune disease (see, for example, col. 4, lines 1-5). Thus, the entire teaching of Weiner relates only to autoimmune diseases, and the present claims no longer comprehend the treatment of autoimmune diseases.

The Enoch reference speaks of "optic neuritis secondary to multiple sclerosis". Neuritis is inflammation of neurons, not degeneration and death of neurons. Furthermore, nowhere in Enoch is there any indication that people with MS have glaucoma or that optic neuritis secondary to multiple sclerosis is related in any way to glaucoma. The examiner does not explain how a reference relating to optic neuritis would somehow suggest the obviousness of using a treatment taught to suppress the T cell attack aganst myelin in multiple sclerosis, in order to treat glaucoma. Even if glaucoma were prevalent in MS patients, and Enoch does not state this, it would not be obvious to use the method of treatment of Ling or Weiner for the treatment of glaucoma. There is nothing in

Ling or Weiner that states that the immunosuppressive treatment disclosed therein has anything to do with the prevention or inhibition of axonal degeneration and/or promotion of nerve regeneration.

The examiner cites Poser as indicating that trauma plays a role in the pathogenesis of MS. However, the relevance of this teaching is not understood. According to Poser, MS develops substantially later than the trauma. One treating MS in that case would not be treating the trauma as the trauma would have long since dissipated. Why would one treat a trauma patient with a treatment which suppresses the T cell attack of myelin? It would not be obvious to do so, and it would not be obvious that an MS patient whose MS may somehow have been etiologically linked to a trauma in the past is still suffering from that trauma. In other words, an MS patient would not be suffering an injury which has degenerative effects on the central nervous system or on the peripheral nervous system.

The examiner refers to the "neuroprotective benefits provided to multiple sclerosis patients" taught by Weiner and Ling. However, the examiner is invited to point out where in Weiner or Ling is there any reference to neuroprotective benefits. The only benefits disclosed are the suppression of the autoimmune attack of T cells against the myelin. To the

extent that this might be considered "neuroprotective", it is not the type of neuroprotective benefit which is sought by patients having trauma or glaucoma.

For all of these reasons, reconsideration and withdrawal of this rejection of the claims as presently amended are respectfully urged.

It is submitted that all the claims now present in the case clearly define over the references of record and fully comply with 35 U.S.C. §112. Reconsideration and allowance are, therefore, earnestly solicited.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made".

Respectfully submitted,

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Version with Markings to Show Changes Made

Claims 3, 5, and 16 have been amended as follows:

3 (~~Twice~~Thrice-Amended). A method in accordance with claim 16, wherein said method is for ameliorating the degenerative effects on the central nervous system or the peripheral nervous system of an injury selected from the group consisting of blunt trauma, penetrating trauma, hemorrhagic stroke, ischemic stroke, and damages caused by surgery, and wherein said human is one having ~~said~~ such an injury.

4 (Thrice~~Twice~~-Amended). A method in accordance with claim 16, wherein said method is for ameliorating the degenerative effects on the central nervous system or the peripheral nervous system of a disease selected from the group consisting of diabetic neuropathy, senile dementia, Alzheimer's disease, Parkinson's Disease, facial nerve (Bell's) palsy, glaucoma, Huntington's chorea, amyotrophic lateral sclerosis, non-arteritic optic neuropathy, and vitamin deficiency, and wherein said human is one having ~~said~~ such a disease.

5 (Thrice~~Twice~~-Amended). A method in accordance with claim 16, wherein said method is for ameliorating the degenerative effects of a disease on the central nervous system or the peripheral nervous system, ~~which is not~~wherein said disease is other than an autoimmune disease or a

neoplasm, and wherein said human is one having ~~said~~ such disease.

16 (~~Amended~~Twice-amended). A method of ameliorating the degenerative effects of injury or disease on the central nervous system or peripheral nervous system, by preventing or inhibiting axonal degeneration and/or promoting nerve regeneration, wherein said injury or disease is other than an autoimmune disease or a neoplasm, comprising administering to a human ~~in need thereof~~having such an injury or disease an effective amount for neuroprotection of a composition comprising an agent selected from the group consisting of:

support?

(a) non-recombinant, NS-specific antiself activated T-cells;

(b) a NS-specific antigen or a derivative thereof;

(c) a peptide derived from a NS-specific antigen or a derivative thereof;

(d) a nucleotide sequence encoding a NS-specific antigen;

(e) a nucleotide sequence encoding a peptide derived from a NS-specific antigen; and

(f) any combination of (a)-(e).

Claim 10 has been deleted.

New claim 20 has been added.